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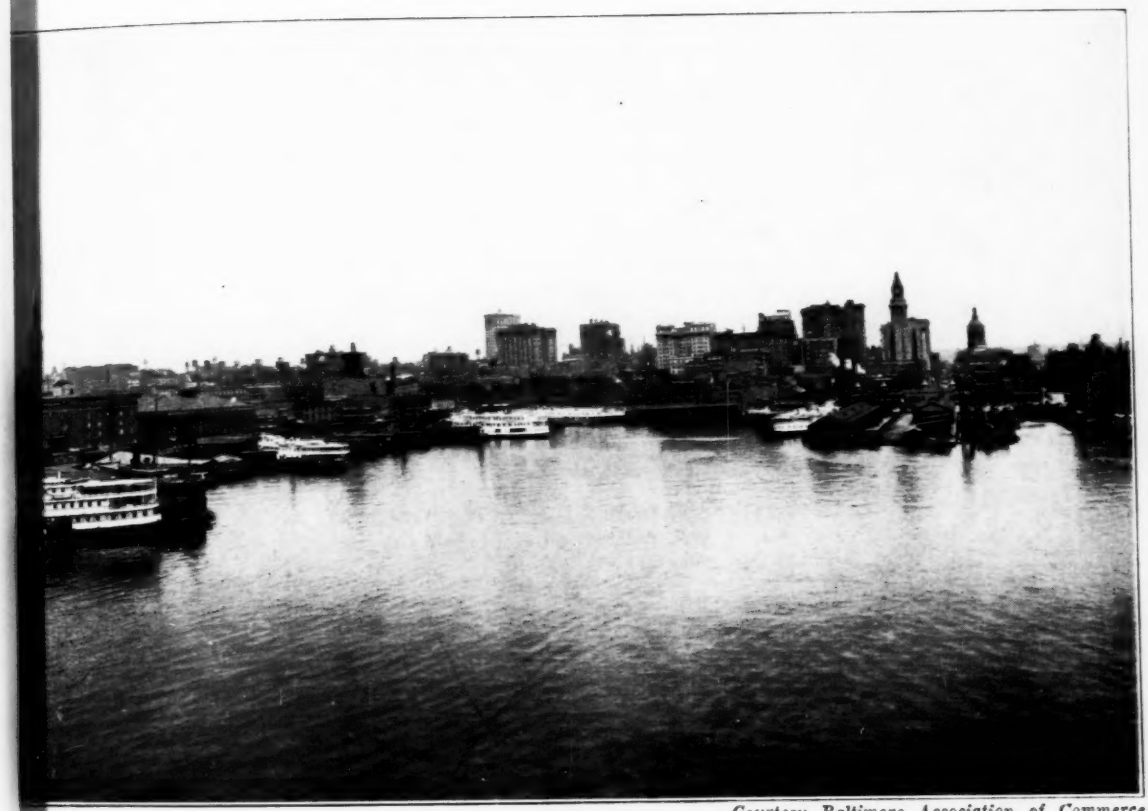

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THE JOURNAL OF GEOGRAPHY

A MAGAZINE FOR SCHOOLS

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Miss Goodale is a teacher of geography in the Mary Hemenway Junior High School, Dorchester, Massachusetts, and author of an article on France and another on Russia, which appeared in the *Journal* of September, 1924, and December, 1926, respectively. In the present contribution she shows how any able teacher may prepare "tests" to show achievement in her own class work with a given course of study. This is likely to be the ultimate contribution that the "test movement" will make to our educational procedure, since so-called "standard tests" for use thruout the country are little short of being absurdities.

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Dr. Ridgley of Clark University was a professor of geography on the "University Afloat" that made its first world cruise last year. Our readers will recall several articles that Dr. Ridgley contributed to the *Journal* while on the Cruise, and will be interested to know that two college cruises are now being planned for next year. The present article summarizes some of the results of the first cruise.

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Miss Nolan is a teacher of geography in the Dearborn Junior High School, Boston, Massachusetts, and a frequent contributor to the literature of geographic and vocational subjects.

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VOLUME XXVII FEBRUARY, 1928 NUMBER 2

ALASKA*

(A Type of Professionalized Subject Matter)

GEORGE J. MILLER

State Teachers College, Mankato, Minnesota

A Land of Retarded Development.—Alaska was first visited by the Russians in 1741, and Russian traders and trappers soon entered the country to obtain fur. They established the first settlement in 1784 on Kodiak Island, and in 1804 founded Sitka, which became the seat of government the following year. During the eighty-three years that Russia occupied Alaska it obtained $45,000,000 worth of furs but did little to develop the colony. The 500 colonists were even provided with food from Siberia. Russian rule ended in 1867 when the United States purchased Alaska for $7,200,000. It was then popularly known as an arctic waste suitable only for primitive natives, trappers, and hunters. Fine furs were thought to be its only asset, and little attention was given to the territory for many years. For a decade it was in charge of the War Department with no government at all except near the army posts, and for seven years more it was under the Treasury Department. Nearly fifty years elapsed before Alaska had any form of local government. During that time it was administered from Washington, 5,000 miles distant. It was given a homestead law in 1903, the right to export timber in 1909, a territorial legislature in 1912, a coal-land leasing law in 1914, and an oil-land leasing law in 1920.

The negligent and dilatory attitude of Congress toward Alaska has been an important factor in retarding development. It is still a frontier land, a vast undeveloped territory of 590,800 square miles, a land containing resources of great potential wealth but without people. The population has risen and fallen with the rise and fall of gold production. Hopes of a fortune quickly obtained brought a rush of prospectors, and failure to realize those hopes

* Published by courtesy of John Wiley & Sons from a forthcoming text on the Geography of North America by G. J. Miller and A. E. Parkins.

caused them to leave. In 1920 the population was only 55,000—about the same as that of Lincoln, Nebraska—and more than three-fifths was in the southern and southeastern districts. Nearly half the total population consists of Indians and Eskimos. There are only five towns with more than a thousand people, Juneau being the largest with 3,000. More than 99 per cent of Alaska is still owned

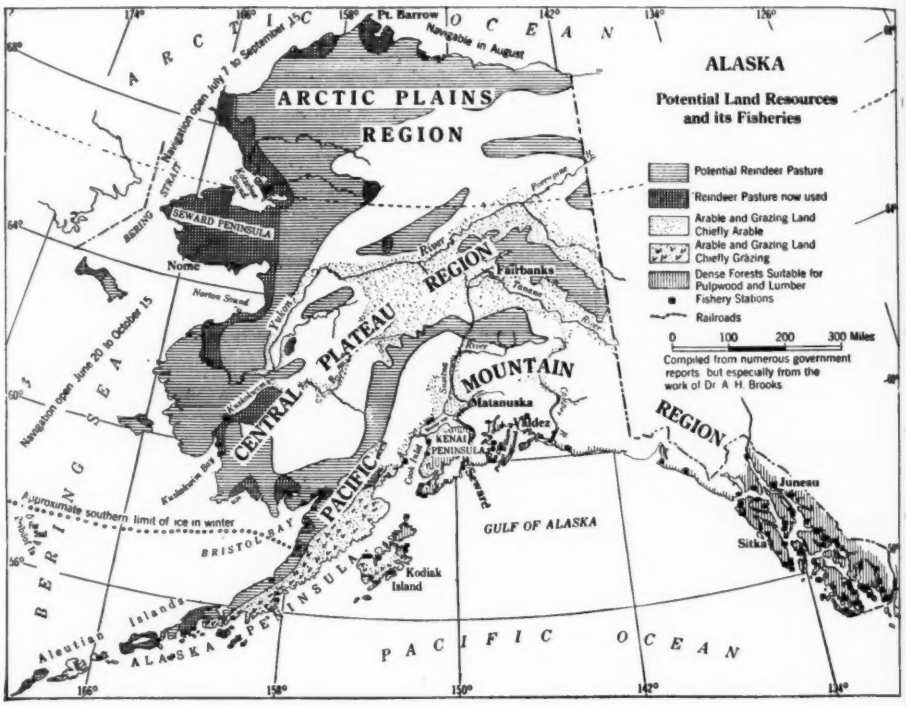

FIG. 1. Major physiographic regions of Alaska, its potential land resources, and its fisheries.

by the Federal Government, and both Federal and Territorial income is collected as taxes or licenses chiefly from the fisheries and business enterprises. Some hold that development of a frontier country like Alaska cannot progress far under present leasing laws, while others hold that these laws are adequate for present needs and will prevent acquisition of Alaska's wealth of resources by a few individuals or corporations. Whatever may be the correct viewpoint, it is certain that progress of a substantial nature can come only with the establishment of permanent industries. It is also clear that man will not risk large investments in a frontier

country like Alaska unless large profits are reasonably certain.

Past Production and Future.—White men tend to go where great potential wealth exists whether the laws of a stable government are there or not. This has been more or less true in Alaska. Notwithstanding the mining and leasing laws that have been in force, Alaskan products for the period 1867-1923 were valued at $1,133,000,000. More than nine-tenths of this huge sum was derived from salmon, gold, copper, and seal. The mineral output and fish products each exceeded $500,000,000 and the value of the furs taken was more than $89,000,000. The total value of the products for the period stated is 157 times the purchase price; more than 10 times the total sum expended on Alaska exclusive of revenue obtained from its industries; and more than 40 times the net cost to the Federal Government for current expenses. To state this in another form, if the purchase price and the cost of permanent improvements be charged to investment and revenue credited, the total income produced by Alaska equals a return of 1457 per cent on the Federal Government investment.

It appears that only a small fraction of the mineral and other resources has been taken. Minerals of excellent quality, in great variety, and in large amounts still remain. The coal deposits exceed 30,000,000,000 tons; usable water power is abundant in the southern part, and prospects for producing petroleum on a commercial scale are considered good. The fisheries may be expanded and continued indefinitely under proper conservation regulations. The splendid forests are awaiting utilization. The immense acreage of agricultural and grazing lands is almost wholly unexploited, tho a start has been made. Greater production of raw materials and finished products for export, development of adequate interior transportation facilities, extension of manufacturing industries based upon utilization of local raw materials and power, and establishment of permanent local markets for the products of agriculture and grazing are all in the future. With their growth will come greater commerce and population. Alaska is yet a land for the pioneer. *Is Alaska suitable for a permanent home for white men in any considerable numbers? Do Alaskan resources warrant the conclusion that a population equal to that of Finland or of Sweden can be supported? Can Alaska ever become of importance as a home for man?* Grave doubt exists in the minds of most people.

GEOGRAPHIC REGIONS

Alaska may be divided into three broad geographic provinces that present striking contrasts in surface, climate, vegetation, mineral resources, agricultural possibilities, and consequently in the opportunities for human use. These provinces may be designated as (1) the Pacific Mountain Region, (2) the Central Plateau Region, and (3) the Arctic Plains Region. The Territory has a very wide range of climate with a corresponding range in native vegetation, varying from dense forests, thru the semi-arid type, to arctic tundra. These large variations are due to (1) great

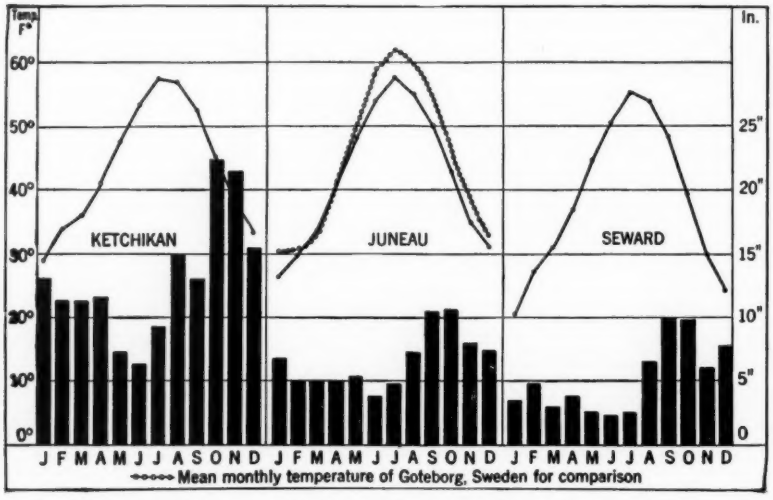

FIG. 2. Mean monthly precipitation and temperature at three stations along the Pacific coast of Alaska.

latitudinal extent, (2) the temperature of bordering waters—the warm Pacific, the cold Bering Sea and Arctic Ocean, (3) the direction of prevailing winds, and (4) the distribution and high altitude of the mountain ranges. The mean annual temperature varies from 40° in the south to 10° in the north, a greater range than prevails in the continental United States.

The Pacific Mountain Region.—The Pacific Mountain Region is a continuation of the rugged mountainous district of the United States and British Columbia. It is a region of high relief and of great valleys, and extends some 1,200 miles along the coast and about 200 miles inland. Numerous snow-capped peaks rise to high altitudes, such as Mt. McKinley (20,464 feet) in the Alaskan Range, and scores of large glaciers descend to the coast from the extensive snow fields. It is a region of cool summers and mild

winters (Fig. 2), and very heavy precipitation, ranging from 50 to 120 inches annually. Snowfall on the higher slopes is heavy. Contrary to popular belief, the mean winter temperatures of Sitka, Juneau, and St. Louis, Missouri, are nearly the same, but the extreme minimum of St. Louis is much lower. Seventeen of the twenty-five Weather Bureau stations on the Pacific Coast of Alaska have never recorded temperatures lower than the St. Louis minimum of –22°. The summers, however, are cool, damp, and chilly. The lower mountain slopes are heavily forested with such

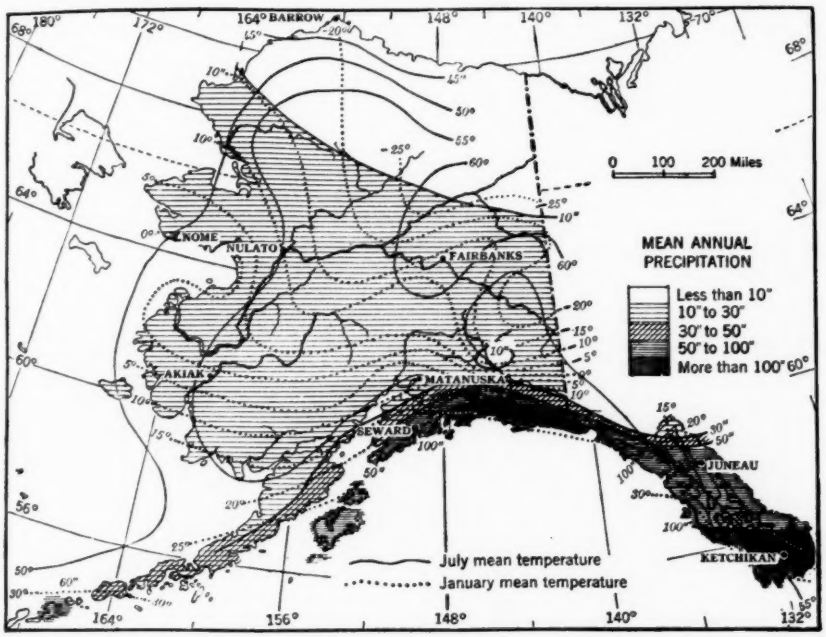

FIG. 3. Mean annual precipitation and mean temperatures for January and July. Compare with grafs showing monthly distribution. After U. S. Weather Bureau maps.

valuable trees as hemlock, spruce, and cedar. Nearly all of the best timber is included in the Federal reserves. The extensive forests comprise more than 26,700,000 acres and contain about 77,000,000,000 board feet of timber suitable for pulp and lumber. Much of the timber is now fully ripe and should be utilized at an early date. However, it probably cannot now compete in outside markets with the lumber of higher quality and greater variety available in Oregon, Washington, and British Columbia. The annual cut is now about 50,000,000 board feet, a large part of which is used for salmon cases. Fish, forests, and minerals are the principal economic assets of the region. Agriculture, except

in favored localities, is not likely to attain much success, as the arable land is limited and the cool, damp summers are unfavorable.

The Central Plateau.—The Central Plateau Region contains about 200,000 square miles, an area nearly as large as that of Nebraska and the two Dakotas combined. It is of relatively low relief, characterized by flat-topped highlands separated by broad stream valleys and lowlands, except along the Bering Sea section where broad lowlands broken by low, rounded hills dominate. Within it lie the basins of the Yukon and Kuskokwim, the first being Alaska's great highway in summer as it is navigable for 2,200 miles. This is a country of short, warm summers with eighteen to twenty hours of sunshine daily; the winters are long and cold (Fig. 4); and precipitation is scant (9-10 inches)

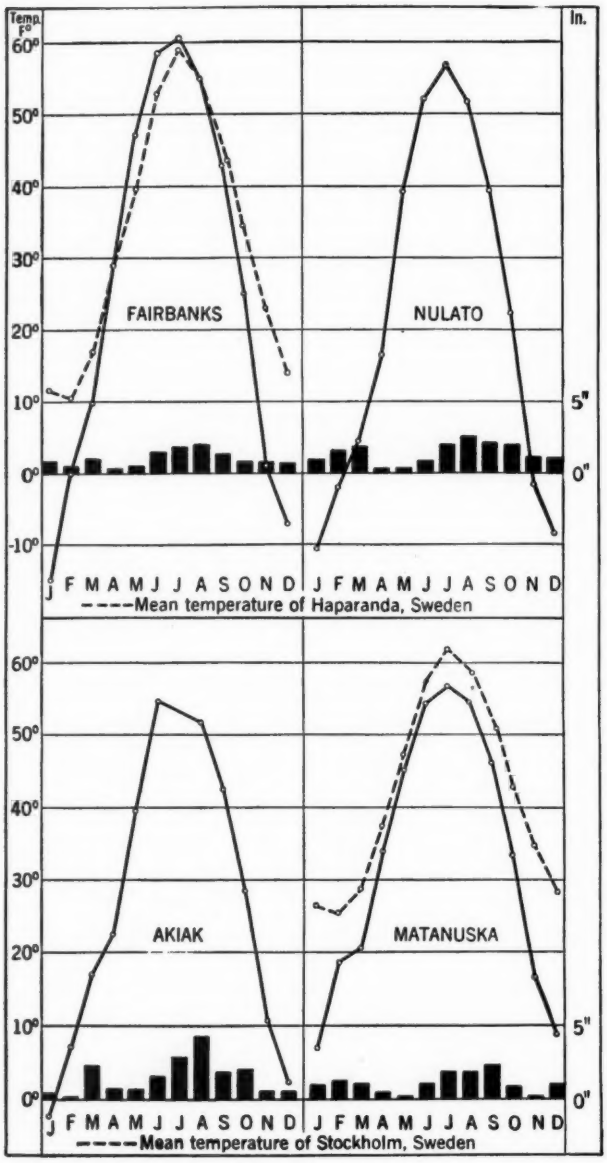

FIG. 4. Mean monthly precipitation and temperature at four stations in the Central Plateau Region of Alaska.

with very little snowfall. The region contains most of the agricultural lands of Alaska and is rich in minerals—its two chief resources. A vast wealth of gold has already been obtained from the alluvial gravels. About two-thirds of the area is forest of the woodland or small open-growth type. However, not more than half of the forested area carries timber suitable for commercial purposes and that cannot be utilized for more than local uses until transportation is provided. The principal species are white and black spruce, white birch, balsam poplar, black cottonwood, aspen, and tamarack. Its forests are mere "scrubs" compared with those of the Pacific Region, varying from almost nothing in the stunted black spruce areas to 20-30 cords per acre in the birch and aspen sections, and several thousand board feet per acre in the best white spruce areas. Highly valuable pastures occur over much of the area and offer opportunity for the grazing of reindeer.

Arctic Plains Region.—The northern region, separated from the Central Region by the Brooks Range, contains about a sixth of the Territory and may be truly called Arctic Alaska. It is a region of more or less rolling low relief, a slightly elevated plateau dissected by northward-flowing streams. Its climate is of the true arctic type, with only about 6-8 inches of precipitation, long, cold winters, and cool summers. Summer extremes of 66° and winter extremes of –54° have been recorded (Fig. 5). The long period of continuous sunshine, extending thru days and weeks except when the sky may be obscured by clouds, produces a luxuriant growth of mosses, flowers, lichens, and grasses over much of the area even tho the soil cover thaws to a depth of only a foot or two before winter sets in again. So far as is known, the mineral resources of the region are small, tho coal and petroleum are present. Production of reindeer or muskox upon its extensive pastures is probably the greatest opportunity it offers.

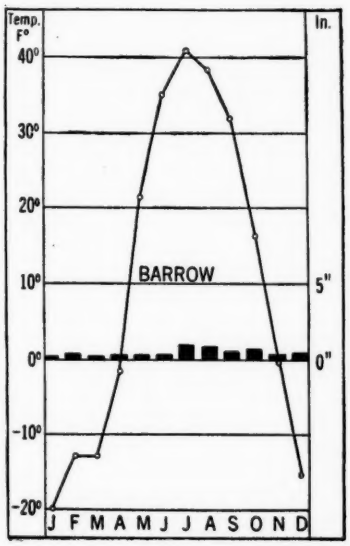

FIG. 5. Mean monthly precipitation and temperature on the Arctic coast of Alaska.

MINERALS

Alaska is rich in minerals. There are large reserves of gold, copper, coal, silver, platinum, tungsten, lead, marble, gypsum, and numerous other minerals, all of which are likely to be of significance in the future development of Alaska. A small amount of petroleum is now produced, but little is known about the reserves. The mineral resources are widely distributed thruout the Central and Pacific Regions (Fig. 6).

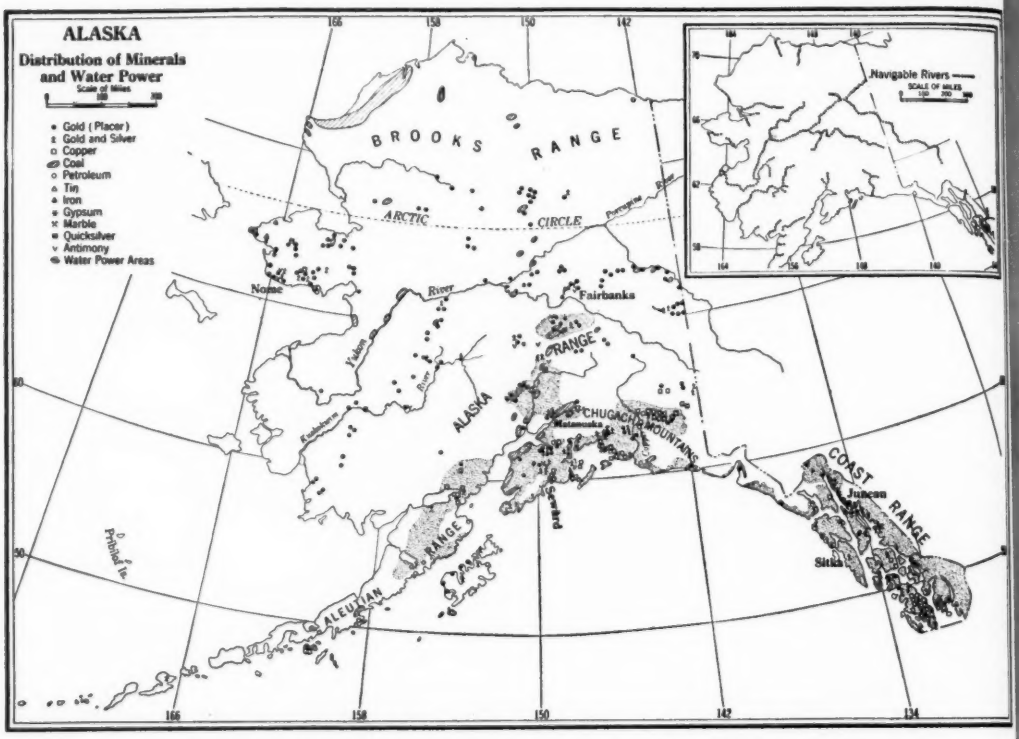

FIG. 6. Distribution of Alaska's minerals and navigable rivers.

Gold first attracted large numbers of people to the Territory, and it has also held many of them there, since they have a permanent interest in Alaska in contrast with employees of the fish canneries. When a man could wash a fortune from the gravels in a short time with no more equipment than pick, shovel and pan, he could pay costly transportation and endure hardships. Under these conditions alluvial gold mining developed rapidly for a time along the Yukon and other interior streams. As the bonanzas became exhausted and the yield per cubic yard of gravel became

small, production declined. Large power-driven equipment is necessary to work such deposits profitably. Its use requires transportation facilities, far more of which must be provided before the mineral reserves can be exploited. The reserves of alluvial gold probably exceed in value all that has been produced to date, which is more than $200,000,000. Two decades ago three-fifths of the mineral output came from remote districts without good transportation and in recent years only a twentieth. Hard rock or lode mining can be conducted only where steamers, railroads, or good highways are available and freight rates relatively low. Hence 97 per cent of the gold taken from lodes has come from mines situated near the coast. More remote deposits must await cheaper means of transportation than now exist. Up to 1923 the total value of gold produced in Alaska was 47 times larger than the price paid to Russia for the entire territory. Furthermore, the gold value alone is more than twelve times the net cost to the Federal Governmen for current expenses since the purchase in 1867. And the total value of gold is only three-fifths that of the fisheries!

Copper mining is in its infancy tho the annual output is more than twice as valuable as that of gold. It is now produced in districts served by railroads or steamers, as in the Copper River Valley and near the coast. Copper deposits, however, are widely distributed, and about a hundred are likely to be of commercial size. Coal deposits are also widely distributed, and the reserves are estimated to be about 30,000,000,000 tons, at least half of which can be made available easily. Most of the reserves are of subbituminous coal and lignite, but the fuel value of the Matanuska and Bering River coals is as high as that of any other coal on the Pacific Coast. The Alaska Railroad now serves the Matanuska field where most of the present small annual production of 120,000 tons is obtained. Other deposits along this railroad are now being developed. Coal mining by private companies was not feasible until 1914 when the Government enacted a coal-land leasing law. The demand for coal in Alaska and on the Pacific Coast of the United States is sufficiently large to absorb all that can be mined for several years to come (Fig. 7).

FISH AND FUR

Fisheries.—The fisheries are the most important industry and were the first to be developed extensively (Fig. 8). Fishing was

carried on by the Russians long before the purchase of Alaska by the United States and many American fishermen visited its shores regularly while it was still a Russian colony. The first salmon canneries were not built until 1878. In 1923 there were 130 in operation, and the total value of the salmon products was

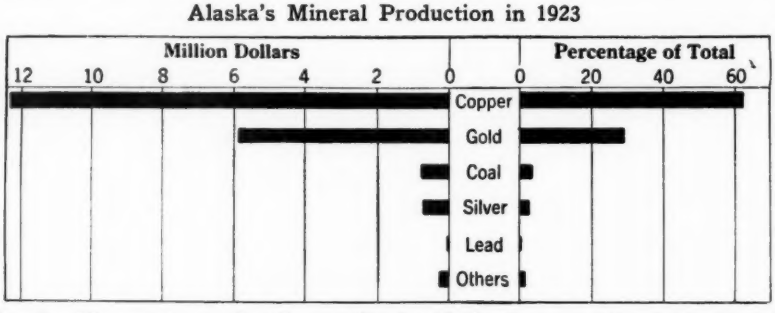

FIG. 7. The copper produced annually in Alaska is more than twice as valuable as the gold.

$34,000,000, which was nearly nine-tenths of the total value of all fish products exclusive of aquatic furs. The value of all fish products for the same year was nearly twice that of all minerals mined, and the aggregate value since Alaska was purchased in

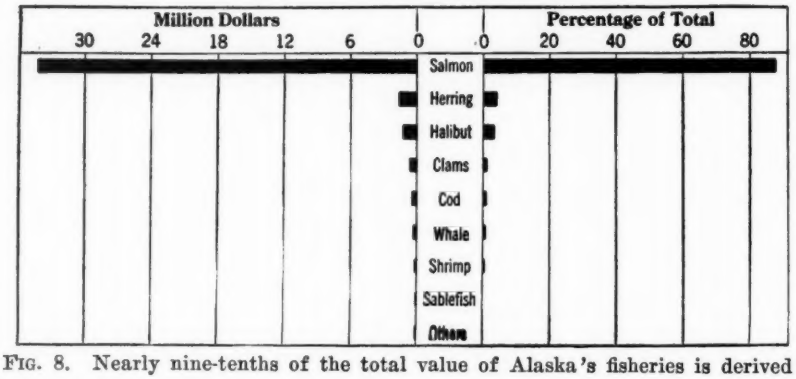

FIG. 8. Nearly nine-tenths of the total value of Alaska's fisheries is derived from salmon.

1867 exceeds half a billion dollars. It has been estimated that "The amount of food obtained from salmon in the war years is equivalent to that furnished annually by three and a half million head of cattle, for the support of which seventy million acres of natural pasture is needed."[1]

[1] A. H. Brooks, *Geographical Review*, Vol. 15, p. 39.

Fish are taken thruout Alaskan waters, but the investment in the fisheries of southeastern Alaska is nearly equal to that of the western and central districts combined. Salmon, halibut, herring, cod, and whale are the principal fish now utilized. Salmon streams are found along more than 2,500 miles of coast, and in the Yukon salmon spawn 2,000 miles inland. The young salmon finds its way to the sea, where it remains until it is from two to five years old, when it returns to fresh water to spawn. At that time immense shoals of salmon gather along the Alaskan shores, and it is then that huge numbers are caught. Since the largest runs occur periodically with corresponding years of smaller runs, the fishing industry fluctuates in harmony with the habits of the salmon. In 1923 all fisheries gave employment to 25,200, which was 3,200 more than the year before. There was also a similar variation in the number of canneries in operation. Investigations show sufficient salmon to maintain the commercial fisheries indefinitely under present conservation laws.

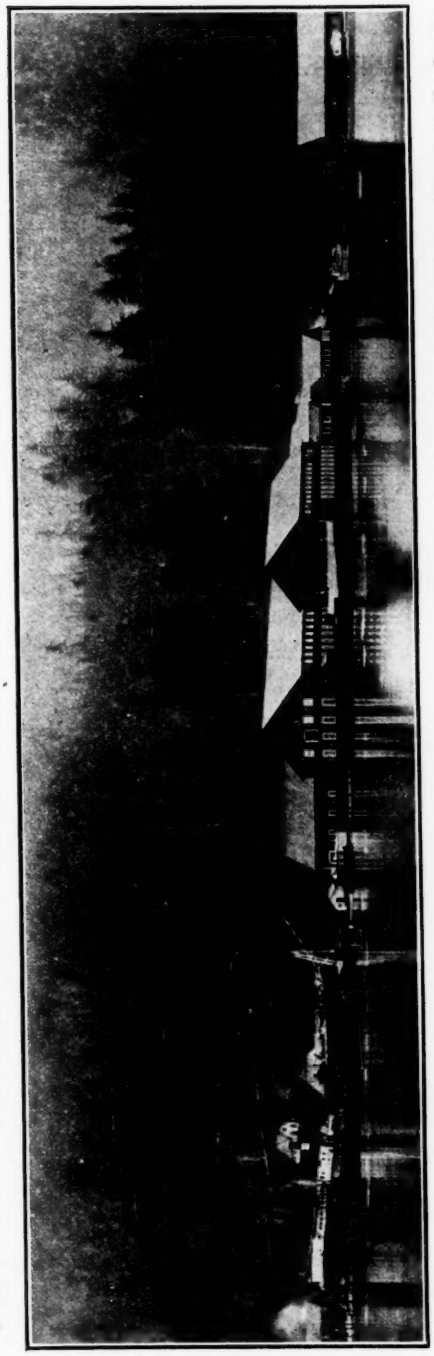

FIG. 9. A salmon cannery in southeastern Alaska. Note the dense forest that extends to the shore line. Also note the heavy fog that enshrouds the forest. Courtesy U. S. Bureau of Fisheries.

Fur Industry.—The search for fur first brought the Russians to Alaska, and fur remained the chief interest of the country for more than a century. Ruthless killing nearly exterminated the sea otter, and likewise the seal of the Pribilof Islands. Formerly, not

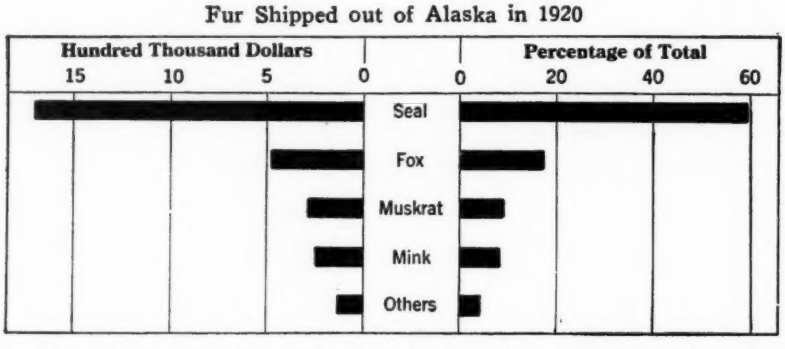

FIG. 10. The seal provides nearly three-fourths of the value of all fur shipped out of Alaska annually.

less than 3,000,000 seal visited these islands annually, but the number had been reduced to only about 125,000 when the Federal Government took over the sealing industry in 1911. By 1924 the herd had grown to 697,000 and, if the present methods of con-

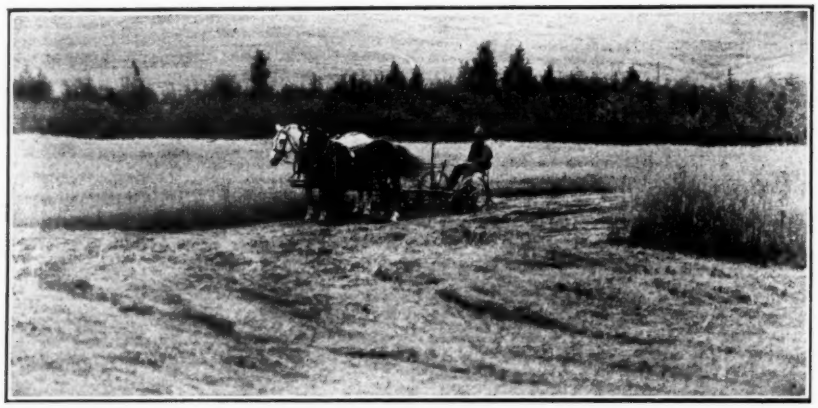

FIG. 11. A farm scene near Fairbanks. There are a number of good farms and farm homes in this district. They show what may be done in the region. Courtesy *Alaska Weekly.*

servation are maintained, may regain its former size. The annual kill of excess males is now about 15,000-20,000. Alaska has many valuable fur-bearing animals and now produces nearly $3,000,000 worth of fur annually. About three-fifths of this amount is ob-

tained from the seal, and more than a third from the fox, muskrat, and mink (Fig. 10). With the advancement of settlement, a fur industry based upon the capture of wild animals naturally declines. However, fur farming may be extended almost indefinitely and thus develop a profitable and permanent industry.

AGRICULTURE AND GRAZING

The feasibility of agriculture and grazing in Alaska has been demonstrated, since crops and livestock have been produced by white men for more than a century. Tho the agricultural resources are almost wholly undeveloped, crops of wheat, rye, oats, barley, hay, and potatoes and other hardy vegetables are produced for local consumption (Fig. 11). The harvested acreage in the Territory in 1919 was only 4,470 and the products were valued at $393,900. The most extensive development has taken place in the Fairbanks section where the farm produce found a ready sale in the towns and mining camps. Present crop production in Alaska is limited by transportation facilities and markets rather than by either climate or soil. Until time changes these conditions, large crops cannot be produced profitably as Alaska's farmers cannot compete in exports with other countries. Present production, therefore, is merely indicative of what may be produced in the future. When the more desirable lands of the continent are taken up and the pressure of population is felt, as it has long since been felt in Europe, Alaskan agricultural lands will be used.

Arable Land.—Estimates of Alaska's cultivable and grazing lands vary from 65,000 to 100,000 square miles, probably half of which is suitable for cultivation (Fig. 1). These estimates are exclusive of 150,000-200,000 square miles of reindeer pasture. The principal areas where agriculture can be most successfully conducted are in the valleys of the Yukon, Tanana, Susitna, Matanuska, and Copper rivers, and the west side of Kenai Peninsula. Much of the best class of farming lands is in the Susitna and Matanuska valleys which are traversed by the Alaska Railroad. There are probably 5,000,000 acres of arable land within a hundred miles of this trunk line. In the Susitna-Matanuska and Cook Inlet region alone, there are about 1,300,000 acres suitable for farming without expensive drainage. This fraction of the area would provide 8,100 farms of 160 acres each. It is significant to note that the minimum estimate of 65,000 square miles is more than two and one-half

times larger than that of similar lands in Sweden and nearly seven times those of Finland, two countries that now have agricultural populations of 2,800,000 and 1,000,000, respectively. Alaska also has large areas of land not considered of agricultural value, tho poorer lands in parts of Europe are now producing crops. Most of the arable land is in the Central Plateau Region which is climatically best suited to the growth of crops (See maps.). Fully half the area has a growing season of 70-105 days and a maximum of 18-19 hours of daily sunshine during the summer period. The scant rainfall is a greater influencing factor than either temperature or growing season. The grazing season for cattle and sheep is only about 100 days, tho there is some winter pasture in the drier parts. Eight to nine months of indoor feeding is a handicap to livestock production, and hence it is carried on only incidental to mixed farming. The area of agricultural land in the Pacific Region outside of Kenai Peninsula is relatively small and, in general, the land is more valuable for forest growth. A notable exception is some 8,000 square miles on the Alaskan Peninsula, Kodiak, and adjacent islands that carries a luxuriant growth of grass. Cattle and sheep may be pastured for six to eight months each year, and continuously in favored localities. These grazing lands are within 50 miles of ocean waters navigable thruout the year. The problem of winter feeding is yet to be solved, as the heavy summer rains are not favorable to the curing of hay. It appears probable that root and forage crops for ensilage may be the solution. Furthermore, the mosquito is a much less serious pest in this district than in the Central Region.

Soils.—The soils of Alaska are of fair fertility. Only in the immediate vicinity of the streams can they be called rich and deep. Much of the agricultural area is wooded, and the ground is covered with moss. Both the timber and moss must be removed before crops can be raised. The heavy covering of moss is a poor conductor of heat, and beneath it the ground remains frozen. Much of the ground ice is a survival of a former colder climate and disappears or sinks to a level that permits crop growth when the moss is removed and the land sultivated. The ground ice that remains in cultivated lands during the dry summer is an advantage as it prevents drainage and supplies moisture to the crops. Where the soils are dominantly peat, from the accumulation of partially

decayed vegetable matter, drainage is needed; in the driest parts of the interior irrigation may be necessary, tho moisture supplied by the ground ice may prove sufficient.

So far as climate, soil, and topography are concerned, sufficient food can be produced to support a population of several million people. However, good accessible markets are essential to large crop production. The sparsity of markets for Alaskan agricultural products is in contrast with the abundance of such markets available to the farmer of Sweden and Finland. Further growth of agriculture, therefore, must await the establishment of other industries on a more extensive scale than exists at present, the more complete occupation of more favorably located lands elsewhere, and the development of adequate transportation facilities.

Reindeer Industry.—The raising of reindeer for meat undoubtedly offers the greatest immediate opportunity for utilization of Alaska's pasture lands. Perhaps reindeer are to be the forerunner of agricultural settlement, as cattle were in the United States proper. However, vast areas suited only to the reindeer, or some similar animal, will remain after the agricultural land is taken up. The first small herd of 10 was introduced in 1892. From the natural increase and by subsequent importations, the number has grown to about 350,000, and at least 100,000 have been killed for food and clothing. The practicability of the industry has been fully demonstrated. Between 150,000 and 200,000 square miles of natural grazing lands are available and are capable of maintaining three to four million head. It is probable that the annual meat production from such a herd would exceed in value all the precious metals mined and would be second only to the fisheries as a permanent source of income. At least a million reindeer could be maintained on lands that are now sufficiently accessible for profitable use.

TRANSPORTATION AND COMMERCE

Transportation.—Modern man will not make his permanent home far from a modern system of transportation. Rivers serve fairly well in a new country, but if development is to take place more efficient means of moving men and goods are essential. Because of its great size, wide distribution of important resources, and long distance from American and foreign markets, adequate transportation is of vital significance to Alaska. Tho the Yu-

kon is navigable for river boats to Whitehorse in Canada, a distance of 2,200 miles, it is open only three months. The Kuskokwim is navigable for 650 miles, and ocean vessels may reach its mouth during four months. These two rivers, with their tributaries provide about 5,000 miles of navigable waters which serve their basins in a very meager way. The snow cover and the ice on rivers, lakes and bays favor overland travel in winter, but transportation by dog or reindeer-drawn sledges is primitive at best and wholy inadequate for industrial progress. In 1923 there were 898 miles of railroad completed or under construction. Nearly five-eighths of the mileage is in the Government Railroad connecting Seward with Fairbanks along the Susitna and Nenana valleys. A branch line extends into the agricultural and coal lands of the Matanuska Valley. There are also about 400 miles of gravel-surfaced highway. A start, therefore, has been made to provide better transportation facilities. Far more are needed. That railroads or highways will yield a profit for many years to come is highly improbable.

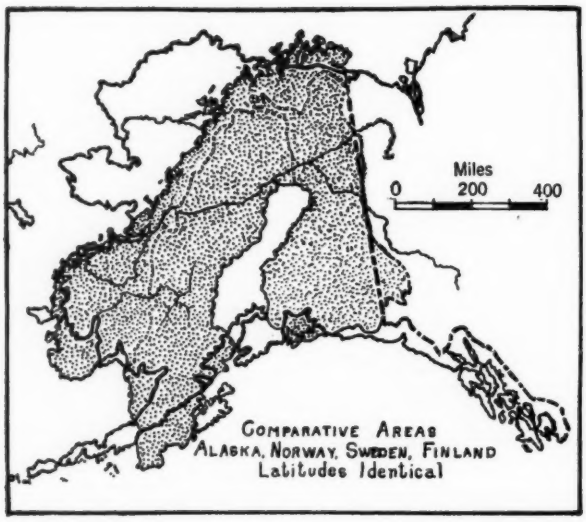

FIG. 12. Alaska is larger than Norway, Sweden, and Finland combined. They are located in the same latitude. Is Alaska potentially equal to those three countries as a home for man?

Commerce.—The total commerce of Alaska is nearly $90,000,000 annually, more than three-fifths being exports; of these, nearly three-fifths are products of the fisheries, and nearly a third are copper and gold. Furs, lumber, marble, wood pulp, gypsum, lead, and reindeer meat are other principal products. Nearly all of the exports go to the United States, from which Alaska imports about $30,000,000 worth of merchandise.

ALASKA, SWEDEN, FINLAND

Alaska, Sweden, and Finland are in approximately the same latitudes (Fig. 12). The first has a more favorable oceanic location, but the other two have access to far better markets. Sweden and Finland, respectively, have populations 107 and 60 times larger than Alaska. Their people are progressive, capable, sturdy, energetic, and cultured. Both countries have evolved high types of civilization. This has been accomplished in environments possessing unfavorable climate and poorly endowed with other natural resources. A statistical comparison of the known resources of Alaska, of Sweden, and of Finland is presented in Table I. Sweden has the larger potential waterpower, and Finland the larger area of good timber, but Alaska surpasses both countries in all other resources except iron. The extent and quality of the Alaskan iron deposits have not been determined. Alaska's potential food resources, measured in agricultural lands, grazing lands, and fisheries, are far greater. The same is equally true of its metallic mineral reserves and of its power resources measured by fuels and water power combined. Fully three-fourths of Alaska has a climate superior to that of Finland and to much of Sweden. Both countries far excel Alaska in the present utilization of resources. This is strikingly true of the agricultural and grazing lands. Finland, with only a tenth of the arable land of Alaska, exports $8,000,000 worth of dairy products. A large proportion of its farms are relatively small, and the small farmer finds work during the winter months in forest industries. Most of Alaska's agricultural lands are in the interior, and the better forest areas are on the coast. Hence, if the Alaska farmer is to find work in the lumber camps during the long winters, he must travel considerable distances. If Finland can support 3,330,000, and Sweden 5,885,000 people, with natural resources inferior to those of Alaska, it seems reasonable to assume that Alaska may eventually maintain as many. Nevertheless, the time when it will do so is far in the future. People will not undertake the hardships of pioneer life in Alaska until better markets and transportation facilities are provided. This will come with the development of industries other than agriculture. Alaska may therefore be looked upon as a reserve for the future, to be used when the better lands and other choice assets of the United States have been more fully taken.

TABLE I

COMPARISON OF RESOURCES OF ALASKA, FINLAND, AND SWEDEN*

Resource	Alaska	Finland	Sweden
Area, square miles	586,400	144,250	173,550
Agriculture			
Farming and grazing lands, square miles	94,000	9,500	24,300
Cultivated land, square miles	9	6,000	19,300
Agricultural population	1,000	1,000,000	2,800,000
Annual production, cereals, tons	(1919) 140	(1905) 776,000	(1910) 23,389,000
Annual production, potatoes and other root crops, tons	(1919) 1,200	(1905) 446,000	(1910) 50,238,000
Reindeer pasture, square miles	150,000	8,000	40,000
Forestry			
Total area of woodland, square miles	190,000	79,000	82,000
Areas of good timber, square miles	35,000	61,000	
Minerals			
Placer gold reserves	$200,000,000+	None	None
Lode gold reserves	Very large	Very small	None
Copper reserves	Very large	Very small	Small
Iron reserves	Probably large	3,600,000 tons	442,000,000 tons
Platinum, tin, chromite, antimony, mercury, sulphur.	Commercial deposits	None	None
Marble	Large deposits	None	Little
Sources of Power			
Total area of coal lands, square miles	2,000+	None	309
Probable petroleum reserves	Large	None	None
Total water power, H.P.	2,800,000	1,500,000	3,500,000
Total developed water power, H.P.	50,000	163,000	1,100,000
Fisheries			
Total export fish, 1913, tons	135,500	10,000	50,000
Communications			
Railroads, miles	765	1,900	7,000
Wagon roads, miles	1,030	27,240	38,380
Inland waterways, miles	6,000	3,240	900
Population			
Total	54,890	3,330,000	5,885,000
Per square mile	0.1—	23	34

* A. H. Brooks, The Value of Alaska. *Geographical Review*, Vol. XV (1925), p. 25.

PROBLEMS

1. Is Alaska as suitable as a home for man as the Rocky Mountain and Plateau States?
2. Can Alaska meat production equal that of the Rocky Mountain and Plateau States?
3. Will the agricultural and livestock industries become the leading ones in Alaska?
4. Can Alaska maintain a population equal to that of California?
5. What three factors have been most important in retarding the development of Alaska?
6. What resource is likely to wield the greatest influence in the future development of Alaska?
7. When will Alaska be as densely settled as Norway?
8. How does Alaska compare with Scotland as a home for man?
9. Which geographic region of Alaska is likely to have the largest population in the future?

NEW TYPES OF TESTS

MADELINE F. GOODALE
Mary Hemenway School, Boston

Educators and teachers of today realize the value of "Standard Tests." They also realize that these should be supplemented with other tests. Again they realize that the old traditional type of examination has its place, its advantages, but also its serious disadvantages.

"Standard Tests" are of great help in efficient teaching, but, due to their expense and for other reasons, are sometimes used too seldom. Thus, the up to date teacher may supplement Standard Tests and the old traditional type tests with classroom tests of their own construction. Teachers will find that they can become very skilled in constructing tests of the new order, i.e., Selective Tests, True-False Tests, Completion Tests, Judgment Tests, Associative Tests. Not only may these new tests be used to test knowledge gained by pupils but may be used as teaching devices. My five Grade 8 classes of approximately 200 pupils enjoy these tests when we use them for geography matches, boys *vs.* girls. Again, these tests help a teacher in placing pupils, providing her with a knowledge of pupils who need special help or of pupils who are capable of doing extra work. These tests help a pupil by giving a pupil objective standards to work toward.

Another advantage for the teacher in using these new types of tests lies in the method of scoring. The scoring is fairer to the child than is that of the percentile scale used in marking the old

traditional type of examination. The new type of testing certainly makes a teacher's work more efficient when used rightly.

The two tests presented in this article have been used successfully in my Grade 8 geography teaching:

SCORING OF SELECTIVE PAPER

The scoring of this test is a matter that may be decided by each teacher.

If a teacher wishes to give all answers equal values, he may give each question a certain number of points, say 2 points. A perfect mark, then, for the test I am presenting, using this type of scoring, would be 40 times 2 or 80 points.

If a teacher wishes to score in a more particular manner, he may make a scale in which certain questions are given greater values than others, some being considered more important than others. This is a matter to be decided by the teacher, according to the method of teaching used in presenting the given subject matter, according to subject matter which has been stressed and made important, according to subject matter considered valuable to a child in later life, and according to countless other factors which teachers realize must be studied.

Up to this point the teacher's judgment has entered in; but once values are fixed and decided upon by a teacher, or better still by a group of teachers, these values must remain constant for all pupils. Our aim in this new testing is to make testing as objective as possible. The scoring will then be uniform and fair for all.

SCORING OF ASSOCIATIVE PAPER

In scoring this test, a teacher should remember that the aim of this type of test is to see if, from a number of leading words or ideas, a pupil can write a short, clear, statement explaining his knowledge of ideas involved.

A teacher should first make a scale in which values vary according to the quality of answers given by pupils. Points might be used say from 0 to 3. The teacher might assign to an answer giving all the requisites of a best answer, 3 points; to one having some value, 2 points; to one having little value, 1 point; to one having no value, 0 points. Points once fixed or decided upon should remain constant for all pupils. The score of the pupil will be the sum of points earned. A perfect mark in the test here presented would be 40 times 3 or 120 points.

Eighth Grade Geography Paper

(Argentina, S.A.)

Score..... Date.....

This is a Selective Paper. Put a line under ONE of the four possible selections of words in the parentheses in each statement. Put the line under the ONE word which you think makes the statement most nearly true and sensible. Do your best.

1. (Buenos Aires—Rosario—LaPlata—Santa Fe) is called the "Paris of South America."
2. The products of Argentina are similar to those of our own (New England—West—South—Middle West).
3. The coast line of Argentina is (even—irregular—unbroken—regular).
4. The soil is like that of our (prairies—coastal plains—plateaus—piedmont).
5. The plains in the central part of Argentina, near Buenos Aires, are called (llanos—prairies—pampas—campos).
6. Farmers of Argentina are troubled by (boll weevil—corn borer—potato bug—locusts).
7. The greatest part of the grain exported by Argentina goes to the (agricultural—commercial—mining—manufacturing) countries of Europe.
8. Buenos Aires has (bad—unhealthful—good—impure) air.
9. (Wheat—fruit—rice—sugar) is raised on the pampas.
10. Nearly one-fifth of the land owners of Argentina are (Greek—French—Italian—English).
11. Argentina exports (rubber—grains—manufactured goods—agricultural implements).
12. Argentina's hardest wood is (rose wood—teak wood—redwood—quebracho wood).
13. Argentina's manufacturing is undeveloped due, in large measure, to the fact that it has (much—little—no—great) fuel.
14. Argentina's climate is (torrid—frigid—temperate—subtropical).
15. Today Argentina has more railroads than (United States—rest of South America—Europe—Canada).
16. Argentina is known for (wheat—cacao—tobacco—coffee).
17. Argentina imports from the United States (agricultural machinery—grains—hides—wool).
18. American men own large refrigeration plants in Argentina and have offices in (Para—Santiago—Chicago—London).
19. (North—South—East—West) of the farming region of Argentina is a cooler climate where sheep are raised.
20. Argentina is mainly an (industrial—agricultural—commercial—mining) country.
21. Argentina imports mainly (minerals—foodstuffs—manufactured goods—raw materials).
22. In Western Argentina, in the low foothills of the Andes, nearly 250,000 acres are covered with (corn—wheat—wood—vineyards).
23. Argentina is famous for its (cattle—coal—petroleum—rubber).
24. Argentina's supply of (mahogany—quebracho—walnut—maple) will soon be exhausted at the present rate of depletion.
25. Argentina consists mainly of (mountains—plateaus—deserts—plains).
26. Argentina raises more (cows—hogs—sheep—horses) than any other animal.
27. Argentina has taken first place among the countries of South America in the raising of (tobacco—flaxseed—hemp—sugar).

28. (Tropic of Cancer—Equator—Antarctic Circle—Tropic of Capricorn) passes thru Argentina.

29. The extent of Argentina in latitude compared to that of the United States is (greater—equal—less—negligible).

30. An important port of Argentina on the Atlantic coast is (Asuncion—Bahia Blanca—Rosario—Montevideo).

31. Lack of fuel in Argentina is a hindrance particularly to (manufacturing—agriculture—mining—commerce).

32. Railroads connect the farms and ranches of the pampas with the (interior—coast—mountains—plateaus).

33. Argentina has an abundance of (textiles—agricultural implements—machinery—raw materials).

34. One of the chief railroads runs from Buenos Aires westward over the plains and the Andes to the city of (Talca—Valparaiso—Valdivia—Santiago).

35. The (Appalachians—Rockies—Andes—Catskills) are mountains of South America.

36. As the wheat lands of Argentina are more fully occupied and as better methods of cultivation are used, the annual yield of wheat will (decrease—increase—triple—double).

37. Northward, Argentina extends within the Tropical Zone and in the eastern part receives plenty of rain from the (doldrums—northeast trades—westerlies—southeast trades).

38. A great supply of wheat from Argentina will be needed in the future in European markets to take the place of wheat from (Asia—England—Germany—United States) which, more and more, is needing its own for home consumption.

39. Sugar cane is grown in Argentina in the subtropical region around (Tucuman—Rosario—Bahia Blanca—Bragado).

40. In northern Argentina there are mines yielding (iron—precious metals—coal—petroleum).

Scoring Key for Selective Paper

1. Buenos Aires
2. Middle West
3. irregular
4. prairies
5. pampas
6. locusts
7. manufacturing
8. good
9. wheat
10. Italian
11. grains
12. quebracho
13. little
14. temperate
15. rest of South America
16. wheat
17. agricultural machinery
18. Chicago
19. south
20. agricultural
21. manufactured goods
22. vineyards
23. cattle
24. quebracho
25. plains
26. sheep
27. flaxseed
28. Tropic of Capricorn
29. greater
30. Bahia Blanca
31. manufacturing
32. coast
33. raw materials
34. Valparaiso
35. Andes
36. increase
37. southeast trade winds
38. United States
39. Tucuman
40. precious metals

Eighth Grade Geography Paper
(South America)

Score..... Date.....

This is an Associative Paper. Write a short, true, clear statement about each of the following. Be sure you are right. Think. Do the best you can.

1. Nitrate is found in Chile in solid form in the greatest quantity in the world. Found in the Atacama Desert. Used for fertilizer and explosives. Chief product of Chile. Of great value during the World War.

2. South America extends thro a greater number of degrees of latitude than does the United States. There is a great variety, therefore, of climate, of products, and of man's adaptation to his environment.

3. Called the "Paris of South America." Capital of Argentina. Commercial center. Exports hides, grains, livestock. A terminal of the Trans-Andine Railroad. A modern city of South America.

4. Wild rubber is one of the chief products of Brazil. It cannot compete with the plantation rubber of the Far East. Para is the chief city for the exportation of Brazilian rubber.

5. A great port of Chile for exporting of nitrate. Connects with United States via Panama Canal. Connects with China, Japan and the Far East.

6. Crosses Andes from Buenos Aires to Valparaiso. One of the greatest railroads of South America. A feat of engineering skill.

7. Quito, Ecuador, tho at the equator, has a beautiful, spring-like climate all the year around, due to its great altitude.

8. The Brazilian forest around the Amazon River, at the equator, is an excellent example of a tropical forest. It abounds in luxuriant plant and animal life, dense over and under growth, has a hot, moist climate. It is full of dangers to man. It contains valuable products as rubber, woods, spices, etc.

9. Brazil leads the world in coffee production. Supplies about 80 per cent of, and could supply 100 per cent of, the world's coffee due to its excellent conditions of climate and its methods used in the plantation method of coffee culture. São Paulo and Santos and Rio are the chief ports for the exporting of this product.

10. Grows in Brazil. So hard, is called an ax breaker. Too heavy to float on a stream. Supply will be exhausted at the present rate of depletion unless measures are taken to conserve.

11. Connects South America, United States and Europe in commerce. Ships are never empty on this route. Route may begin at any one of these three countries.

12. Main language spoken in South America. Studied in commercial courses in our schools and colleges today as a means of increasing our efficiency in trade with South America.

13. Raised in Chile and Western Argentina by Italians who like to live here as they can carry on industries similar to those of Italy, as grape culture and wine making.

14. Cacao, coffee, rubber, spices, woods, dyes, hemp, tropical fruits come from the tropics of South America.

15. Grazing is one of the leading industries of Argentina on the grassy plains. Argentine wool is of excellent grade.

16. Railroad construction is favored in Argentina more than in any other country of South America, due to temperate climate, level land, progressive people.

17. One of the needs of the countries of South America is that of better forms of government. The countries have had many revolutions since a century ago when they won their independence. Unstable governments have hindered progress. Capitalists fear to invest money in countries whose governments are not strong.

18. Similar to those of the United States in the temperate zone.

19. Desert of Chile is noted for the largest deposits in the world of nitrate in the solid form. Rain is almost unknown, which aids the industry of nitrate. This desert, otherwise useless, makes it possible for Chile to make millions of dollars on the one product of nitrate.

20. To become a power in world affairs, South America needs more money. Capitalists of the world would invest much more money in South America if she had a more stable and better form of government.

21. Called the backbone of South America. Some of the loftiest mountains in the world. They form a natural boundary between many of the countries of South America. Water flowing down from the mountains is used for irrigation and water power. In the future, the water power will be used to generate electricity.

22. Nitrate in some form is found in practically all explosives—nitric acid, nitroglycerine, T.N.T., dynamite, etc. The World War showed the importance of Chilean nitrate.

23. Tropical climate makes people of the tropics less energetic, less skillful, less ambitious, less educated than those of the temperate zone. It does not lead to inventive skill. It aids growth of tropical products and has many advantages as well as disadvantages.

24. Many people living in South America are Indians. The Incas were a race of Indians once inhabiting South America. Indian, Negroes and half-breeds are employed in the rubber industry.

25. Before South America can become important in world affairs it must give education to all. This is lacking today.

26. Valparaiso is an important port on the coast of Chile, connecting with California and the Far East and exporting products of countries of South America. It is a terminal of the Trans-Andine Railroad.

27. Nitrate is used as a fertilizer. Enough nitrate was wasted in one indecisive battle of the World War to keep India from famine. It is found in the Atacama Desert.

28. Grains are raised extensively in Argentina and shipped to the manufacturing countries of Europe. Low, level plains, like in our Middle West. Argentina is the granary of South America.

29. Manufactured goods are imported in South America as it is backward in manufacturing. It is mainly an agricultural country and lacks fuel for manufacturing. The Industrial Revolution has been late in coming to South America.

30. Para is near the mouth of the Amazon and is the leading rubber exporting city of South America.

31. South America, especially the country of Argentina, imports from the United States modern agricultural implements and machinery which are improving the industry of South American agriculture.

32. Altho the continent has little coal the water power is excellent. This water power will help in the future development of manufacturing. Venezuela, Colombia, and Argentina are rich in petroleum.

33. Has been mined in South America for centuries. For years it produced more than any other country. Now the United States and Japan produce more. Many tons are shipped each year thro the Panama Canal to the United States to be smelted or refined. American capitalists develop Chilean copper mines.

34. Antofogasta, on the coast of Chile, is the first city in the world for the exporting of nitrate.

35. Vanilla is the product of a bean of a tree of the Brazilian forest from which perfumes and flavoring extracts are made.

36. It received this name from its long, narrow extent of land.

37. They are the most important countries of South America. Received the name from their initials.

38. Only countries of South America not independent. Are owned by French, Dutch, and English. Carry on trade since they are on the coast.

39. One of the chief ports of Chile. Exports products of its hinterland as nitrate, copper, fruits. Trades with United States and Far East.

40. Technical name for cocoa. Fruit of a tree of the tropics. Cocoa and chocolate are obtained from the bean.

Scoring Key for Associative Test

Teacher assigns points according to her judgment; but points once assigned remain constant in the scoring of all papers. Following are statements on which points may be assigned.

1. Nitrate
2. Latitude
3. Buenos Aires
4. Wild rubber
5. Iquique
6. Trans-Andine Railroad
7. "Land of Eternal Spring"
8. Equatorial forest
9. Plantation coffee
10. Quebracho wood
11. Triangular trade route
12. Spanish language
13. Grapes
14. Tropical products
15. Grazing
16. Railroad construction
17. Forms of Government
18. South temperate zone products
19. Atacama
20. Capital
21. Andes
22. Explosives
23. Tropical climate
24. Indians
25. Education
26. Valparaiso
27. Fertilizer
28. Grains
29. Manufactured goods
30. Para
31. Agricultural machinery
32. Fuel
33. Copper
34. Antofagasta
35. Vanilla
36. "Shoestring Republic"
37. "A. B. C." Countries
38. Guianas
39. Santiago
40. Cacao

THE FIRST COLLEGE CRUISE AROUND THE WORLD

An Educational Experiment

DOUGLAS C. RIDGLEY
Professor of Geography
First College Cruise

During a period of 227 days, from September 18, 1926, to May 2, 1927, there existed an experimental college whose campus was an ocean liner and whose travels included 34,000 miles of ocean voyage and 6,000 miles of land journeys. The 486 students enrolled in this experimental college came from 40 states and territories, and two foreign countries. They represented 66 colleges and universities. They represented classes from the last year of preparatory work, thru the four years of the regular college curriculum, with more than fifty graduate students. The faculty included 49 members, representing 32 educational institutions, 17 states, and 3 foreign countries.

EQUIPMENT FOR COLLEGE WORK

The "University Afloat" contained all the essential elements of a well equipped land college. A library of several thousand volumes and numerous maps was installed on C-Deck, in charge of an experienced college librarian. The library room was equipped with tables and chairs to accommodate nearly a hundred readers at one time. A short-time charging system permitted students to take books to the deck or to their cabins for reading and study. A large supply of wall maps and navigation charts were available for the study of the general course of the cruise and the details of harbors and countries visited. Atlases, gazetteers, encyclopedias were available and used assiduously. Descriptive literature, travel books, and statistical abstracts dealing with the next country were in constant demand. The library equipment had been selected for its immediate value for a World Cruise on the chosen route, and it served its purpose well.

The class in Navigation, conducted by officers of the ship, had a rare equipment for the pursuit of their study. The S.S. *Ryndam* was their laboratory. The students of this class were given privileges never extended to tourist passengers. They learned

to handle the sextant and other instruments of navigation. Their instructors took them to the bridge of the ship to become acquainted with the details of navigation. These students, as a part of their laboratory work, explored the complete contents of the life boats; visited the engine room under the direction of the chief engineer; learned the details of loading and unloading a ship by means of machinery; observed and discussed the characteristics of harbors and harbor facilities.

Classes in Botany and Zoölogy collected and studied specimens in the regions visited. The botanical gardens, aquaria, and natural history museums of world-wide fame gave these classes access to appropriate laboratory and museum materials.

Classes in History, Economics, and Foreign Trade had good library facilities and an abundance of concrete laboratory material on every shore trip.

Classes in English composition and Public Speaking had no dearth of fresh, first-hand material for language development.

The Physical Training Department had a complete equipment for vigorous and wholesome exercise on deck. Daily instruction was given as definitely as in the gymnasium of a land college.

Dramatic work was carried on with enthusiasm, and provided many hours of pleasant recreation to interested audiences.

Opportunities for Geography and Geology

Classes in Geography and Geology had adequate equipment in library references and maps, with field studies ever present on sea and on land. The weather conditions of every day furnished new climatic data. The approach to every harbor was a field study in both geography and geology. The land journeys, numbering more than fifty, and totaling more than 6,000 miles, gave opportunity for field studies in geography and geology never before approached by college equipment for regular college courses.

Hundreds of miles of sailing were within sight of land, and studies of shore features were made from the ship's deck to better advantage than could be done from any other point of observation. The early morning approach to the harbor of Hilo, on the island of Hawaii, gave, in the changing colors of the dawn, a view of a volcanic cone never to be forgotten. This general view from the ship was the proper introduction to the day's automobile trip that followed along the narrow, cultivated coastal plain and up

the mountain side to Kilauea. A morning view of Diamond Head, Waikiki Beach, and the harbor, gave the setting of Honolulu and a general view of the plains and mountains of the island of Oahu.

Only on a world cruise, based on educational values, is the captain of an ocean liner likely to vary his course, as Captain Lieuwen of the *Ryndam* did, to give close-up views of shore features and, in the Sunda Straits, to pass over the deep water where once stood the ancient cone of Krakatoa, so that his passengers might study at close range the fractured vertical wall of the remnant of that volcanic mass.

Railroad journeys and automobile trips of 50 to 800 miles inland were field studies in regional geography and geology. The more important of these were the journeys of 110 miles from Yokohama to Nikko; of 80 miles from Bangkok up the valley of the Menam River to Lopburi; of 50 miles from Batavia to Buitenzorg, and 110 miles from Batavia to Bandoeng; of 75 miles from Colombo to Kandy; of 800 miles from Bombay to Agra; of 150 miles from Suez to Cairo, and the return journey to Port Said; of 200 miles from Haifa in a circuit thru Ludd to Jerusalem, and return thru Nazareth; of 30 miles from Trieste to the grotto of Postumia; of 30 miles in a circuit drive in Malta; of more than 300 miles from Havre to Paris, on to the battle fields, and across Belgium to Rotterdam; of 300 miles from Hamburg to Berlin and 60 miles from Hamburg to Lubeck, 70 miles from Gothenburg to Trollhattan; of 100 miles from Edinburgh thru the Sir Walter Scott country; of more than 300 miles from London to Oxford, Stratford-on-Avon and in the Thames Valley.

With a library and a classroom equipment which compared favorably with the usual college equipment for geography and geology, and with 110 days of scheduled field trips in more than 40 regions of the world, the opportunity for students to learn geography and geology surpassed that offered in a period of one year of land college.

THE STUDENTS' RESPONSE TO THE OPPORTUNITIES

If the American newspaper reporters along the route of the Cruise had sought as diligently for information about the value of the Cruise to the best students, as they did for information about misdemeanors of the ne'er-do-wells, they would have written front-page news items of utmost interest and value. They would

have recorded facts about the College Cruise which would have given their readers an insight into the educational results of an important educational experiment, based upon the attitude which characterized the great majority of the student body. There were exceptional educational returns to students who entered upon their college work with the same earnestness of purpose that students do in their home colleges. These students co-operated with the executive committee and the members of the faculty to secure the advantages of travel experiences woven into a college curriculum. They aided in every way to make the experiment a success, and their efforts were abundantly rewarded in the educational values obtained. It was commonly stated by these diligent students that they regarded the educational values of the college year spent on the World Cruise as the equivalent of two years in their home college. They broadened their horizon of direct observation. Sympathetic appreciation of peoples of the world developed, and this enabled them to understand better the international relationships among nations. College courses in history, economics, sociology, geography, took on a concreteness not readily attained in books alone. Classroom discussions and travel experiences were woven together so as to give point and purpose to wider reading.

Some Examples of Student Response

The value of this educational experiment to the students who entered into the college work with a fine spirit of studentship can be indicated by some of the student activities. More than two-thirds of the 110 days spent on shore was planned for by the advance agent and participated in by all the students. At many ports, a half day, or a whole day, of free time was given. This gave instructors and students an opportunity to form small groups for special study and investigation. The use of this free time by the high grade student was a good test of his attitude toward the special educational privileges offered by the Cruise. A few examples illustrate the point.

At Cristobal, two college boys, one a freshman and one a sophomore, agreed that they would profit by using a half-day of free time in investigating the port facilities for handling freight, especially coal. The detailed reports of all they found, in a few hours, were proof positive that these two college boys were get-

ting returns of high educational value from independent studies early in the Cruise. They maintained this high level of interest and enthusiasm thruout the voyage.

The Cruise plans for the visit of five days in Egypt did not include a trip up the Nile Valley to Thebes and Luxor, to the Valley of the Kings, and the tomb of King Tut-ankh-Amen. For two weeks previous to arrival in Egypt, students were planning for this additional trip of several hundred miles at their own expense. Time would permit the trip, and the plan met with the full approval of the Cruise Manager and the Executive Committee. A college student was asked to become manager for this journey. A group of nearly one hundred students joined the party. The trip was well planned. Two successive nights spent on trains without sleeping accommodations, one day of intensive field work which included twelve miles of donkey riding and much walking; and $40 of personal funds were the prices paid for this successful field trip under student initiative and student management.

A college student obtained permission from the Management to travel alone by train from Edinburgh to London. For two days he traveled as a citizen of the British Empire. His report of the trip revealed an interest and enthusiasm which marked these two days as outstanding experiences in his life.

Two teachers of Mount Vernon, New York, were granted leave of absence on half-pay to carry the experiences of this World Cruise back to their pupils of the city schools. One was a teacher of geography in the junior high school, the other was a primary teacher. Each was supplied by the school authorities with a modest sum of money with which to purchase materials in foreign lands for permanent use in the schools where they taught.

They chose to make a special study of native foods at all ports. Their free time found them investigating the native markets and frequently partaking of native meals in the restaurants and hotels. The geography teacher made the study of native foods the basis of her special reports in the seminar held on the ship. The diligence with which she read about the next country in books of travel, encyclopedias, statistical abstracts, and other sources, gave evidence that the educational opportunities of the Cruise were being used to full advantage.

A group of advanced students showed a laudable desire to have experiences of this Cruise function in their educational prog-

ress as fully as possible. They determined to organize a discussion group. In conference with the Executive Committee they were encouraged to carry out their own plans for getting most out of the trip. For this special effort, they organized their group without reference to any scheduled class exercise, and developed their own methods of procedure. One person was assigned to study the geography of the next country to be visited; another was to make a special report on the history; another on the government; another on the social conditions; and so on thru a list of topics of vital and related interests. A typewritten report of the investigations of each member of the group was made available to all. Discussions of these reports were conducted by the group when at sea. A country was reviewed and reconsidered in the light of first-hand observations. An educational experiment was developed and proved of value.

College Credits on the University Afloat

The faculty voted to recommend students for college credit only on a basis of genuine college work. Instructors granted credits on the same basis of accomplishment as in their home colleges. Some colleges have accepted the credits at face value; some have granted credits upon satisfactory examinations.

The members of the faculty realized the difficulty of presenting systematic college courses under the conditions of a college cruise, and were probably as cautious in granting college credit as many colleges are in accepting them. The caution thus exercised by all tends to make the college credits of the University Afloat acceptable for advanced standing in the home colleges.

Suggestions Growing Out of the Experiences of the First College Cruise

The following results and suggestions come from the experiences of the First College Cruise Around the World.

1. A college Cruise for a full college year is feasible and of high educational value.

2. College credits can be earned and evaluated on a College Cruise as definitely and as satisfactorily as in a land college.

3. Some college subjects are better adapted than others for systematic instruction on a College Cruise. The educational director of a College Cruise may develop a rich and varied curriculum

made up of those subjects in which there is close correlation between classroom instruction on the ship and shore experiences in the land journeys.

4. Order and method of presentation of systematic courses on a College Cruise should be modified in order to capitalize the experiences of the Cruise. The course may thus cover all the essentials and be strengthened by first-hand observations.

5. The more mature students profit by courses organized in seminar groups or discussion groups. Experienced and capable students need the opportunity of using and developing initiative in their own educational activities.

6. A method of selecting students should be devised to obtain enrollment of serious-minded students, bent on obtaining fullest benefit of college instruction with directed travel experiences.

7. A year of organized study and travel in a College Cruise carries advantages over World Cruises of shorter duration and greater expense with college features omitted.

8. A fair evaluation of the results of the First College Cruise, leads to the conclusion that the College Cruise is worthy of systematic and permanent development among educational institutions.

CORRELATION OF GEOGRAPHY, HISTORY, CIVICS, AND ECONOMICS

M. Olive Nolan
Dearborn School, Boston, Massachusetts

This is no attempt at an outline of correlation between any two of these subjects, but merely an account of the many instances of close correlation that my boys and I found at every turn in our work.

To be sure, our correlation goes back one more step, that is, to our shop activities of tool making (machine shop practice) and electricity, both of which motivate our academic work.

My plea for correlation is based on the ground that we should teach nothing "in a vacuum," but closely related to life, the lives of children.

Our work is necessarily project work and one problem very often overlaps another, so certain phases need only to be touched upon, if previously studied.

COPPER PROJECT

This was an ideal eighth grade study as it gave an opportunity for a comprehensive review and for much clear thinking. We were most fortunate in having a nugget of copper from the Calumet and Hecla mines and many views of Calumet, Hancock, and Houghton, Michigan. As always, the specimen and views were of vital interest to the boys. They were something real—not out of a book. Therefore, we studied the Great Lake Region first.

FRENCH INFLUENCE ON UNITED STATES HISTORY

It was impossible to study this region without realizing that France had played a part in its early history. The ubiquitous French names and the picture of an occasional ruin of a French fort spoke of Joliet, Marquette, La Salle and of French traders of the later period. The class admitted a hazy knowledge of these explorers and of a Colonial war with the French and Indians and were glad to refer to history books in geography class time, in order to "look them up and get them right."

Bold explorers, hardy woodsmen and ardent missionaries were these Frenchmen; and the boys better appreciated their part in our history as a result of this brief review at a different perspective. We dared go further and compared the rude, crude, methods of living of these French Pioneers with the almost squalid mode of living of so many dark-eyed Pierre's and Nannettes today in our great mill cities of Rochester, Fall River and Pawtucket. These people are on the industrial frontier now.

CITIZENSHIP

While this may be neither history nor geography, civics, sociology or economics, I believe that it is worth while to develop that state of open-mindedness and real tolerance. The French have contributed in many ways to American history and American life. Give due praise to them, who, with their Gallic gayety of spirit with hearts brave but light, faced danger and hardship in forest and on mighty waterways against savage Indians and wild beasts! Give due credit also to these modern French mill workers who make good citizens. Surely, the school can do much to stop the slur of "Canuck," "Frog," etc. Wherever I find an opening in history or geography to stress that real, true, democratic American ideal of neighbors and brothers, I try to do it.

FRENCH AND AMERICAN HISTORY

Many of the cities mentioned had monuments of the gallant Lafayette, so we reviewed the part that he and France played in coming to our aid in those dark days of the Revolution. Our boys were old enough to understand some of the international politics there on the part of the French government, i.e., one blow for America meant two against its enemy, England. Some one immediately asked why we did not, in return, help France a few years later in one of its revolutions, when it sought our aid. I did not have to urge them to look up Washington's policy. They reported, unasked, the next day and felt an added respect for the wisdom of those statesmen who realized that America was too young, too weak, and too poor to be of any substantial aid, and realized, too, that it would ruin our country.

The general idea of the class was that America responded gloriously with men and money in those dire days of 1917 when bleeding France sent its clarion call to us for aid, and that General Pershing with the entire American army, one million strong, at his back, paid in teeming measure our debt to France, as he, with his hand on the tomb of that gallant French soldier said, "We are here, Lafayette." That was a "psychological drive" but a good one. Should I have wrecked that picture by a discussion of all the sordid issues at stake? I do not know. I did *not* do so. We are too close to that war and too many boys lost loved ones, so I let the ideal stand. Later, they will be better able to understand the other side.

By no means was all our history confined to the French. We had pictures of the Cobar Copper Works at New South Wales, Australia, showing that, in a nearly antipodal land, the people were smelting copper in much the same way as they do in our own country. Why such a seven league jump? The boys brought in the pictures; they vivified their work and especially helped to impress on them that "all men are brothers."

TARIFF STUDY

In our study of the copper trade, we found that there is no tax on copper imported into the United States so long as it is "fit only for manufacture." Tariff here loomed before them, and for once, meant something to them. Questioning and reading soon brought out the need of tariff—so our history lessons on the origin and

development of tariff acts, which was such a vague subject to many of us in our school days, became of live interest to these boys, so soon to be men and voters. I believe that they need that knowledge and an understanding of the need of protecting our industries, but, only so far as it is just to people of all sections. A little politics? Yes, public affairs.

From copper to Alexander Hamilton surely seems a far cry, but the class could not study tariffs without learning much of Alexander Hamilton. Their histories had dealt briefly with this man. His was a master mind and it was well worth the time of this class to learn how much our government owes of its firm financial standing to Hamilton's keen insight and excellent judgment.

Economic History and Geography

While electrical work gave rise to many problems and projects, the machine shop bore its full share. Vocational guidance experts would have us teach all history thru the history of occupations and inventions. Most of us would weave that into our history, instead. It is certainly good, in moderation.

While making tools, our machine shop boys found a wealth of history and geography connected with the various tools. For instance, while making hammers as a shop project, they traced the evolution of the hammer from pre-historic times to 1926 for an academic project. We entered upon it because the boys began to wonder (same wonder stimulated by shop instructor) "how folks pounded before they had hammers." The history of the hammer was influenced greatly by the geography of the countries; their resources and their people. The cave men had no knowledge of metals; their hammer was, first a stone, then a stone with a rude handle. Later, copper was used thru the early historic years, until finally civilized man learned to smelt iron, so we had iron hammers; and so on down to the fine, polished steel tool of today.

Italy

Someone brought in a large picture of various tools found in excavated Pompeii. We studied Italy right then and there—that is, as much of it as was necessary to satisfy them until we were ready for a more thoro study. However, that seemed the time to study the region around Mt. Vesuvius and Naples. I believe that, by our study of Italy when they wanted to know about it, they

learned more about its lack of minerals, for instance, than if we had waited for a scheduled day; but what is far more important, I think, is that the study of that region now, as compared with the same region in 27 B.C. opened their eyes to Italy's place in history, in art, in music, and in the world; and gave them a greater respect for the Italians and a better understanding of the fine things for which Italy has for years been noted.

CITIZENSHIP

What of all the poor Italians huddled in cramped and insanitary quarters of some American cities? The industrial frontier idea looms up again. What of living conditions out on our western frontiers in years gone by in lumber camp, mining camps, etc.? Are these two not comparable? Whose job is it to make good citizens of our Italian boys and girls? It is ours and cannot be done by jeers of "Wop" and "Spaghetti."

When the boys made scribers in the shop, they traced (their interest again stimulated by a seemingly chance remark of the shop man) the name of the tool to the Latin "scribo"—to write —and a "scribe"—a Jewish clerk. Perhaps that was English; not geography or history, but it was one way to teach them about other lands and other people and our relations with them, in fact, our dependence on them; and so, by dwelling just a bit on the fact that the Hebrews were scholars thousands of years ago, obviate, if possible, some of that all too prevalent racial bigotry. Mayhap that is civics, not geography or history, but should they all not correlate? I believe that they should.

GEOGRAPHICAL INFLUENCE ON HISTORY

At Christmas, the boys made nut-crackers and picks and so, for a while, we studied nuts. Most of that was geography but, in our study of the irrigated nut-growing regions of California, we found a statement to the effect that California's wealth lay in its soil, not under it, as the "Forty-niners" had thought. "Did many of the forty-niners get rich?" and "Was the 'Covered Wagon' true?" were some of the questions the boys asked. We opened our histories and reviewed "The Gold Rush to California" in all its phases; leading them to see a little beyond, and to realize how its suddenly increased population made it seek admittance so soon to the Union and the effect that had on the balance of power in

the senate at that critical time. We went still further and discussed the direct effect this settlement had on our railroads.

Another class and another teacher might have found very different possibilities on this same subject, but these developed naturally day by day.

The boys had frequently spoken of the cotton waste that they used constantly in the shop and since it was a commodity to be studied, we turned to it when a boy said, "I thought cotton waste was cotton seeds." Here, again, geography featured largely, but "Cotton is King," "Cotton meant slaves and slaves meant the Civil War" and similar statements were challenged. Surely, the fact that white men could not stand the heat and the work of the cotton fields while the black men could, was a geographic and sociological influence on the history of our country. "Why did the invention of the cotton gin fasten slavery on the country?" was another question to be answered. The answer is along economic and industrial lines, of course. The fact that the seeds could then be picked out quickly by machine, encouraged the planters to extend their land and to grow much larger crops, knowing that it could be readily ginned, and hence, marketed. The fact that the South prospers today without slave labor is a problem in economics and sociology, we are told; but a little applied common sense shows that the South has grown and conditions have changed materially. Slavery was wrong. The new South is changed, and for the better.

False Statement

COMMERCE

It is scarcely possible to study cotton without studying wool. Hence, to take up the subject in a little more advanced way and to give them a new angle of thought, we stressed England's monopoly of Australia's and New Zealand's wool, and the struggle for supremacy in Argentina between English and German wool interests.

The study of the wool regions of our Western States and the subsequent manufacture of that wool here in New England, and likewise here the manufacture of southern produced cotton, explained in a measure the ever recurring tariff conflict in our country.

One teacher said, "No one but statesmen understand tariffs." Just because that has been sadly true in the past, tariffs have

often been most unfair to many people. It is time we did understand these things.

Because the study of one fabric leads to another and because a silk and linen shade was made for the wrought iron lamp that the boys made in the shop, we did geography work on silk and linen. The history work was mostly informational, as the fact that the ancient Egyptians manufactured linen and the Chinese first made silk; side lights, as it were, on civilization.

TRAINING FOR DEMOCRACY AT ITS BEST

Silk and linen may seem far removed from school boys in a machine shop—but they will be in the melting pot of tomorrow's democracy and that tomorrow will have to face and decide many perplexing questions concerning tariffs and capital and labor and the like. Knowledge, and judgment, and tolerance, as well as an appreciation of the fine and the beautiful in life will be needed. Surely this is the time to make beginnings along those lines.

We could recount many more of our geography-civics-history projects, but, if these do not make clear our point, more would also fail. If these do, more are unnecessary.

I believe that we have been teaching close to life by correlating our subjects sanely and vitally. I believe that we have made our classes feel that there is joy in learning and in living now, in 1927, more than there ever was and that it is their job to "carry on."

ANNUAL MEETING OF THE NATIONAL COUNCIL OF GEOGRAPHY TEACHERS

Nashville, Tennessee, 1927

The National Council held its annual meeting at George Peabody College for Teachers, Nashville, Tennessee, December 27-28, 1927. The program was unusually strong from the viewpoint of constructive education, presenting two distinctive features in the field of educational geography. Organizing geographical courses in teacher-training institutions was the theme of the first session. How to give adequate training in subject matter and at the same time a professional viewpoint is the crucial problem involved. Various views on the subject were presented by five principal speakers. The papers presented and the following discussions

indicated clearly the importance of combining subject matter and procedure as a unit, and also indicated the substantial progress that is being made in teacher-training institutions in the preparation of geography teachers. A summary of this important discussion will appear in the *Journal of Geography*. Another important phase was the significance of field studies in teacher training. The Presidential Address dealt with this phase of the work. Systematic field study is now being done in a number of the teachers colleges of the country and plans for expansion are being matured. There appears to be no difference of opinion concerning the importance of field work in such training. Other phases of the program dealt with the organization and presentation of geography in the grades.

The Committee on Resolutions presented the following report:

1. *Resolved*, That the National Council of Geography Teachers expresses its appreciation of the fine service rendered by the City of Nashville, and George Peabody College for Teachers, and of the splendid courtesies extended by the Department of Geography of the College.
2. *Resolved*, That the members of the National Council express their deep sense of loss by death of three of our members—Charles Redway Dryer of Fort Wayne, Indiana; Herbert Bassett of the State Teachers College of Macomb, Illinois; and Earl E. Melvin of the State Teachers College, Wayne, Nebraska.

   Dr. Charles R. Dryer was for twenty years Professor of Geography and Geology in the Indiana State Normal School, Terre Haute, Indiana. From this position he resigned in 1912. In the years that followed he was busily engaged in the writing of geography textbooks. He was a member of many scientific societies, and one of the first members of the National Council of Geography Teachers.

   Herbert Bassett was Professor of Geography at the State Teachers College, Macomb, Illinois. During the twenty years in which he held this position he was actively engaged in many lines of geographic work. He died at his post, for he was stricken in his classroom and the end came a few hours later.

   Earl E. Melvin was Head of the Department of Geography in the State Teachers College at Wayne, Nebraska. He was an active member of the National Council of Geography Teachers and last year was President of the Nebraska Chapter of the National Council of Geography Teachers.

   The death of these three geographers is a distinct loss to the National Council of Geography Teachers, to the educational institutions in which they served so faithfully, and to the geographic interests of our country.

FRED J. BREEZE
ESTHER S. ANDERSON
D. C. RIDGLEY
ELLA JEFFRIES
G. A. BUZZARD

The following business was transacted at the annual meeting of the Board of Directors and Executive Committee, December 27, 1927.

1. The Nominating Committee, consisting of R. M. Brown, E. Myrtle Grenels, R. H. Whitbeck, E. E. Lackey, and Ina Robertson, presented its report and the following officers were elected.

President, L. O. Packard, Teachers College of the City of Boston, Boston, Massachusetts.

Vice President, Bessie P. Knight, South High School, Minneapolis, Minnesota.

Vice President, Selma Abrams, New Orleans Normal School, New Orleans, Louisiana.

Secretary, George J. Miller, State Teachers College, Mankato, Minnesota.

Treasurer, Douglas C. Ridgley, Clark University, Worcester, Massachusetts.

Members of Executive Committee, terms to expire December, 1930: R. G. Buzzard, State Normal University, Normal, Illinois; R. H. Whitbeck, University of Wisconsin; Zoe E. Thralls, University of Pittsburgh.

Directors at Large, Mendel E. Branom, Harris Teachers College, St. Louis, Mo.; Fred J. Breeze, Ball Teachers College, Muncie, Ind.; Angela Broening, Johns Hopkins University, Baltimore, Md.; C. E. Cooper, Ohio University, Athens, Ohio; Erna Grassmuck, State Teachers College, Indiana, Penn.; O. W. Freeman, State Normal School, Cheney, Wash.

2. The Committee on Tentative Standards of Attainment was enlarged to five members. The additional members are to be appointed by Miss Erna Grassmuck, Chairman of the Committee.

GEORGE J. MILLER,
Secretary